

CLAIMS

1. A tool holder (1) for a rotary hammer, comprising:

a tube like tool holder main body (10) having a side wall formed with at least one through hole (11) for receiving a locking body (12) for releaseably engaging a corresponding axial closed groove of a tool or bit inserted within the tool holder and formed with at least one additional through hole (40);

at least one hardened metal driving rib (46) located on an insert (42) the or each of which inserts is fitted within a corresponding additional through hole (40) so that the rib extends axially and extends radially inwardly of the radially inward facing surface of the holder body for releasably engaging a corresponding axial rearwardly open driving groove of a tool or bit inserted within the tool holder;

characterised in that the or each additional through hole (40) is formed by at least two overlapping axially offset circular cross-sectioned through holes (40a, 40b) and the corresponding insert has a base (44) shaped to fit the through hole (40).

2. A tool holder according to claim 1 wherein the at least two overlapping axially offset through holes (40a, 40b) are circumferentially aligned on the holder body.

3. A tool holder according to claim 1 or claim 2 wherein the or each additional through hole (40) is circumferentially offset with respect to the or each through hole (11) for receiving a locking body (12).

4. A tool holder according to any one of claims 1 to 3 wherein the or each additional through hole (40) is formed by two overlapping axially offset circular cross-sectioned through holes (40a, 40b).

5. A tool holder according to any one of the preceding claims wherein each circular cross-sectioned hole (40a, 40b) has a cross-section with a constant diameter from the radially outer to the radially inner surface of the holder body 10.

6. A tool holder according to any one of the preceding claims wherein the or each insert (42) is secured in the corresponding additional through hole (40) in the holder body 10 by press fitting, adhesion, soldering or welding.
7. A tool holder according to any one of the preceding claims wherein the or each rib (46) is formed on the insert (44) and the insert is made of hardened metal.
8. A tool holder according to any one of the preceding claims wherein the hardened metal is a carbide material
9. A tool holder according to any one of the preceding claims wherein the base (44) of the or each insert (42) is shaped like a number, corresponding to the number of circular cross-sectioned through holes, of overlapping solid cylinders (44a, 44b) arranged side by side with their axes parallel.
10. A tool holder according to claim 9 wherein the base (44) has an end face shaped as two overlapping circles and the rib (46) extends lengthwise across said end face.
11. A tool holder substantially as hereinbefore described with reference to any one of the accompanying Figures.
12. A tube like tool holder main body (10) of a tool holder 1 suitable for a rotary hammer having a side wall formed with at least one through hole (11) suitable for receiving a corresponding locking body (12) of a tool holder and formed with at least one additional through hole (40) suitable for receiving at least one hardened metal driving rib insert (42) of a tool holder characterised in that the or each additional through hole (40) is formed by at least two overlapping axially offset circular cross-sectioned through holes (40a, 40b).
13. A holder body according to claim 12 wherein the at least two overlapping axially offset through holes (40a, 40b) are circumferentially aligned on the holder body.

14. A holder body according to claim 12 or claim 13 wherein the or each additional through hole (40) is circumferentially offset with respect to the or each through hole (11) for receiving a locking body (12).
15. A holder body according to any one of claims 12 or claim 14 wherein the or each additional through hole (40) is formed by two overlapping axially offset circular cross-sectioned through holes (40a, 40b).
16. A holder body according to any one of claims 12 to 15 wherein each circular cross-sectioned through hole (40a, 40b) has a cross-section with a constant diameter from the radially outer to the radially inner surface of the holder body 10.
17. A driving rib insert (42) for the holder body according to any one of claims 12 to 16 comprising at least one hardened metal driving rib (46) located on a base (44) of the insert (42) which base is shaped to fit a corresponding additional through hole (40) in the holder body so that the rib extends axially and extends radially inwardly of the radially inward facing surface of the holder body.
18. An insert according to claim 17 wherein the rib (46) is formed on the insert (44) and the insert is made of hardened metal.
19. An insert according to claim 17 or claim 18 wherein the hardened metal is carbide material.
20. An insert according to any one of claims 17 to 19 wherein the base (44) of the insert (42) is shaped like a number, corresponding to the number of circular cross-sectioned through holes, of overlapping solid cylinders (44a, 44b) arranged side by side with their axes parallel.
21. An insert according to claim 20 wherein the base (44) has an end face shaped as two overlapping circles and the rib (46) extends lengthwise across said end face.

22. A method of securing a driving rib insert (42) according to any one of claims 17 to 21 to a holder body (10) according to any one of claims 12 to 16, comprising the steps of;

inserting the insert (42) into the corresponding additional through hole (40) so that the rib (46) of the insert extends axially and extends radially inwardly of the radially inward facing surface of the holder body; and

securing the insert (42) in the additional through hole (40) by press-fitting, adhesion, soldering or welding.

23. A method of forming the holder body (10) of any one of claims 12 to 16 comprising the steps of:

drilling a first of the plurality of the circular cross-sectioned through holes (40a, 40b) using a drilling tool;

altering by a predetermined axial distance the relative positions of the drilling tool and the holder body; and

drilling a second of the plurality of the circular cross-sectioned through holes (40a, 40b) using the drilling tool;

wherein the predetermined distance is set so that the first and second circular cross-sectioned holes (40a, 40b) overlap.